

Rachel Carson and Nature Writing

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Without mentioning Rachel Carson, it is difficult to talk about the ecological movement in the United States. She is known popularly as the author of *Silent Spring*, the fierce woman who fought for environmental protection from DDT in Congress and made President Kennedy change his policies. However, she is less known as a great lover of the ocean and an idealist who saw the need for balance between the scientific knowledge of natural phenomena and the emotional and poetic experience of encountering nature. Analyzing *Silent Spring*, *Under the Sea Wind* and *The Sense of Wonder* leads us to a new vision of Carson as first and foremost a philosophical thinker whose roots are firmly embedded in American literary tradition and whose views of human activity in nature have given us a new, revolutionary heritage of "ecocentric" rather than "homocentric" literature. By contrasting these two viewpoints, Carson dramatizes the need for seeing the world not from the old point of view centered upon man and his interests but from the eyes of the living creatures in nature, giving birth finally to our new awareness of the dangers to ecology and our "sense of wonder" in nature in the 20th century.

Key words: Rachel Carson, nature writing, *Under the Sea Wind*, *Silent Spring*, *The Sense of Wonder*, ecocentrism, homocentrism

Rachel Carson is well known as an American nature writer. She warned the people not to exhaust nature in *Silent Spring*. She has been regarded as a scientific writer who gave birth to the ecology movement in the United States. However, the scientist image which is strong in *Silent Spring* is only one aspect of Carson. I would like to reassess Carson's standing as a writer who achieved a unique balance between science and literature. She is not only a political leader and founder of the ecological movement in the twentieth century but also an artistic writer who had rich imagination and creativity.

This paper will first cover briefly Carson's life and development as a writer, and then attempt to assess Rachel Carson's contribution to the genre of nature writing through analyzing three books by Rachel Carson, *Silent Spring*, *Under the Sea Wind* and *The Sense of Wonder* for interesting comparisons. Carson's motive and achievement in *Silent Spring* will be studied as a political document of her monumental struggle against pollution. *Under the Sea Wind* will be treated and analyzed in detail to show her literary sensitivity and the roots of her thinking. This study questions the objectivity of the popular view that Carson was first and foremost a political activist. We will focus on Rachel Carson's literary contributions, begun in *Under the Sea Wind*, that were more fundamental than her political image established by *Silent Spring*. Our study will end with a view of *The Sense of Wonder*, her last work. If *Silent Spring* was her public voice, what is her private voice, her real message that she wanted to convey to her readers throughout her life? A brief look at her growth as a writer will help us see the roots of her ideas.

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1. Carson's Development as a Writer

Rachel Louise Carson was born in 1907 at Springdale, Pennsylvania. She had a brother and sister. Her mother Maria was a pious Christian, and, according to her biographer, Linda Lear, was an admirable nature-study teacher to her children (14). Maria often read many books to Carson since childhood, and therefore Carson decided to become a writer after she grew up. Carson looked back at her childhood with her mother,

I can remember no time when I wasn't interested in the out-of-doors and the whole of nature. Those interests, I know, I inherited from my mother and have always shared with her. I was rather a solitary child and spent a great deal of time in the woods and beside streams, learning the birds and the insects and flowers. (Lost Woods 148)

Her mother was a strong influence on Carson and her sense of worth. Maria taught respect and love for wild creatures to all her children. Carson's great last work, *The Sense of Wonder*, is an attempt to pass on her experience of childhood.

When she was 10 years old, she contributed a story to *St. Nicholas* magazine, a magazine for children, and won the silver prize (Lear 19). After this prize, she often contributed to the magazine, brought out her essays and won the gold prize when she was only 12 years old. She was a talented child. In 1925, Carson graduated from Parnassus High School in New Kensington as one of its outstanding students, and entered Pennsylvania College for Women (later named Chatham College). Then Carson won a scholarship from her high school and the president of the university because of her brilliance and the economic situation of her family (Lear 24)).

In college, she was a diligent student and at the same time she wrote literary essays. She worked for the Arrow, the school's semi-monthly newspaper, and for the *Englicode*, the literary supplement to the paper. In her second year, she won the big prize of her university for a story she had written. She also belonged to the hockey team as a goalkeeper, and acted as a leader of the science club. At Pennsylvania College during her second year, Carson enrolled in biology. She was interested in biology and wanted to change her major. The fact astonished people around her. And they objected, because she had excellent grades in the English Department and she was expected to be a successful writer. She finally decided to switch her major to biology (Lear 35). From Carson's writing, Lord Tennyson's poem "Locksley Hall" inspired her with the love for the sea and it was one of the reasons that made her change her major to biology.

Carson graduated from the college in 1927 and entered Johns Hopkins University as a graduate student in the fall on a scholarship. Before entering she attended the Marine Biological Laboratory at Woods Hole, Massachusetts, on a summer study fellowship. To see the ocean was the first time for Carson in her life, and it confined Carson as a scientist. The days here were the happiest in her life (Lear 62). Carson entered Johns Hopkins University early in October 1929. Within weeks, the Great Depression happened in America. As a result, the Carson family bought the land of Springdale in Pennsylvania and moved to Maryland. In the house she lived with her parents and her brother who lost his job, her sister Marian, who divorced her husband, with her two children. Carson was lucky to get a job as a teaching assistant in the Johns Hopkins summer school (a job she held through 1936), and her brother got a job repairing radios, but the family's financial situation was bad. And she began teaching at University of Maryland, College Park. In 1931, Carson received a master of arts degree in marine zoology from Johns Hopkins. However, her father, Robert Warden Carson, died in 1935 (Lear 77). With her father's death, the financial condition of the family became worse. Under this situation, Rachel applied for a job at the U.S. Bureau of Fisheries and she was hired

temporarily to write radio scripts on marine life, and then edit them for publication (Lear 78). At that time, people who had both the knowledge of the ocean and talent of writing were few.

About a piece she wrote to introduce the newly edited essays she had originally put together for radio production, her boss Elmer Higgins commented that it was far too good for publication in a government pamphlet. He thought it had the value of a separate publication, and suggested that she try *The Atlantic*. Carson took Higgins' advice, and contributed it to *The Atlantic*. It was published as "Undersea" in *The Atlantic* in September 1937 (Lear 87). This started Carson into writing about marine creatures. Higgins knew both aspects of Carson, a meticulous scientist and a gifted writer. He again suggested that she focus on the possibilities of writing about the sea and its creatures, and Carson took his advice. *Under the Sea Wind*, Rachel Carson's first book, was published in 1941, just before the Pearl Harbor attack brought America into World War II. In such social conditions, the contents of *Under the Sea Wind*, the ocean and birds and fishes, was not popular with the public, but critics and scientists appreciated it (Lear 105).

Carson worked for the Bureau of Fisheries from 1935 until 1952. During her government service she also worked on her own projects. She regularly published articles in the *Baltimore Sun* and worked on *Under the Sea Wind* in 1941 and in 1951 *The Sea around Us*. Right after publication of *The Sea around Us*, it became a bestseller. For the value of her works, Carson received some prizes like the John Burrow Medal and the Henry G. Bryant Medal from the Philadelphia Geographical Society as the first woman to receive them. In the bureau Carson was given promotions for her ability as a scientist, and finally she became editor-in-chief of the Information Division of the Bureau. In spite of her steady promotion, Carson attempted to leave government service to devote all her time to writing. After publishing *The Sea around Us*, Carson took a long vacation for observations on wild animals and plants. During her vacation, she thought she would be able to use the income from her writing to make ends meet. Actually before publication of *The Sea around Us*, one part of it, "Birth of an Island" was inserted in the *New Yorker* and the income from it was much better in comparison to her annual salary. With this she quit her government job, and her colleagues often supported her while she wrote and published *Silent Spring*. Carson spent her time that was made by her resignation on observation, reading books and writing. And in 1955, *The Edge of the Sea* was published. In this year she began to write a children's book for her grandnephew, Roger. (She adopted him in 1957, because his mother Marjorie, who was Carson's niece, had died.) She published it as "Help Your Child to Wonder," that was based on her experience with Roger, in *Women's Home Companion*.

In January 1958, Carson received a letter from Olga Owens Huckins. It told Carson of Olga's bitter experience of her garden made lifeless by the use of insecticides in the environment. And the letter made Carson decide to write about the chemical issue (Lear 316). In the year, she agreed to write an article for the *New Yorker* and a book for Houghton Mifflin on the subject of DDT and other toxic pesticides. In the same year, Carson experienced the death of her mother Maria. After four years, in 1962 Carson wrote for a *New Yorker* serial publication in June excerpts from *Silent Spring*. The influence of *Silent Spring* was so great that immediately after publication it became a best seller, and in 1963 CBS broadcast the program "The *Silent Spring* of Rachel Carson." In addition, President John F. Kennedy made his Science Advisory Committee survey what was the truth, and his Science Advisory Committee supported Carson's findings (Lear 415). In the same year, Carson received the National Audubon Society's medal and the American Geographical Society's medal, and was elected to the American Academy of Arts and Letters. Carson found she had cancer in 1960. She battled against it for four years, but in 1964, she died of cancer and heart failure (Lear 480). After her death in 1965, *The Sense of Wonder* was published, which was a reprint of "Help Your Child to Wonder." Today her works are still read widely and they move many people to participate in environment protection. The public interest in Carson is, in fact, still rising. In 2004 an award in her name will be established.

The twenty-first century is said to be the century of the environment. Carson turned people's eyes toward nature. But was she merely a naturalist who wrote to propagandize environmentalism? Was she just a public voice against pollution? A careful look at her works, especially *Under the Sea Wind*, makes us doubt it. We will now study the way she has influenced her age, her methods and literary style and her final message to discover her "real voice." We will first clarify what the genre of nature writing is, and compare Carson with traditional nature writers. And then we will assess the importance of *Silent Spring*.

2. Nature Writing and Carson's *Silent Spring*

Carson's work *Silent Spring* is viewed as a classic in nature writing. Today, many people regard Rachel Carson as a scientist or observer of nature, or a determined political activist but not as a gifted novelist. At first sight, *Silent Spring* has a lot of explanations of chemical reactions, examples of environmental destruction or pollution and evil influence resulting from it. Carson prepared these examples for her battle against insecticide manufacturers. However, *Silent Spring* showed only one aspect of Rachel Carson. It has a political message persuading the reader to environmentalist attitudes. On the other hand, *Under the Sea Wind* gives us a different aspect of Carson. This is a literary work, not political. The fact that this work was a big best seller proves its literary power. Carson's works are indeed classics in nature writing. What is nature writing? First, we will follow the development of nature writing among American writers in the nineteenth century and then discuss *Silent Spring* as a new development in nature writing.

According to Katsumi Yamasato, "nature writing" is mainly works of non-fiction treating the relationship of human beings and nature. What is called "environmental literature" belongs to the same genre, although some of these works are not limited to non-fiction and the literature of man and nature is seen in a more comprehensive frame (Yamasato 227). In this definition Carson's works belong to environmental literature, but the word "nature writing" is so general and common that we will use it in this paper.

The purpose of nature writing is awakening readers to an ecological way of looking at things. A nature writer tries to open the readers' eyes to nature by describing grand natural scenes with beautiful sentences. In addition, nature writers are capable of showing the law of nature to readers by delving into their stories. To know the laws of nature is to re-examine oneself as a human being who is embedded in the natural world. Through this act of thought, an ecological frame of mind is nurtured in the readers.

When Carson received the John Burroughs Medal that is the only literary award that recognizes achievement in nature writing, in the awarding ceremony Carson referred to the audience who were mainly nature writers as follows:

[. . .] if we are true to the spirit of John Burroughs, or of Jefferies or Hudson or Thoreau, we are not imitators of them but - as they themselves were - we are pioneers in new areas of thought and knowledge. If we are true to them, we are the creators of a new type of literature as representative of our own day as was their own. (*Lost Woods* 94)

Nature writers are requested by Carson not only to describe nature but also to introduce new thought and knowledge to the world. Such attitudes of Carson's came from earlier writers on nature such as Thoreau and Emerson.

Henry David Thoreau is considered the father of American nature writing from his contribution to changing people's view of nature. Carson also said, "In this country the pen of Thoreau - as that of John Burroughs himself - most truly represented the contemplative observer of the world about us" (*Lost Woods* 94). Before Thoreau, most

human beings regarded nature as the land that they should pioneer and control. Even Ralph Waldo Emerson, who is said to be the teacher of Thoreau and established Transcendentalism, saw Nature as a means to be used for human inspiration. In "Nature" Emerson wrote: "Whether nature enjoy a substantial existence without, or is only in the apocalypse of the mind, it is alike useful and alike venerable to me" (29). And he also thought, "To the body and mind which have been cramped by noxious work or company, nature is medicinal and restores their tone" (13).

When Emerson discussed the relationship of man and nature, he saw nature as something great but only as a means to come into touch with a spiritual experience. This attitude is regarded as "homocentrism" (Ara 135). According to Takahashi, "homocentrism" regards human beings as the center of the world, when we think dually that human beings are separate from nature. For homocentric thinkers, nature exists for human beings and man can use nature for their end. This is opposite to "ecocentrism," which is the way of regarding the natural environment in the center. However, Emerson's disciple Thoreau had a different viewpoint (Yamasato 226-233). He suggested a new vision or rather, he stopped giving man and nature dual parts. In the first part of "Walking," he mentioned that man is a part of nature.

I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil - to regard man as an inhabitant, or a part and parcel of Nature, rather than a member of society. I wish to make an extreme statement, if so I may make an emphatic one, for there are enough champions of civilization: the minister and the school-committee and every one of you will take care of that. (*Walden and Other Writings*, 597)

In addition, he integrated natural science or natural history with Christian metaphysics (Noda 200-211). On this point, he is considered an originator of nature writing. Here is the metaphysical point of Thoreau, from *Walden*: "A lake is the landscape's most beautiful and expressive feature. It is earth's eye, looking into which the beholder measures the depth of his own nature" (186). This sentence represents the Romantic view of nature. To gaze outside is equal to gazing inside, or to gaze at nature is to gaze at oneself. Thoreau sees himself in nature. The attitude toward nature is directed toward the outside at first sight, but it is actually rather directed toward the inside. In addition, Thoreau wrote this, too: "Walden is blue at one time and green at another, even from the same point of view. Lying between the earth and the heavens, it partakes of the color of both" (176). This sentence shows the metaphysical appearance of nature. He found the point of contact between physics and metaphysics on the surface of Walden Pond.

However, Thoreau often commits unintentionally acts of anthropomorphism (Noda 203). It is the attitude that we try to impose human emotions and significance upon what occurred in wild nature. Anthropomorphism - to personify nature - is the mentality behind homocentrism. Today, anthropomorphism is a big issue for nature writers in expressing nature. Some nature writers achieved their sense of identification with the animals in the wild by subtly anthropomorphizing them. Carson found a solution. Linda Lear writes:

Carson thought she could avoid this error by making the ' sea and its life a vivid reality' and by more accurately re-creating the natural conditions sea creatures inhabit. Restricting herself to analogies to human conduct, she sometimes used words that suggested anthropomorphism, but was careful to distinguish them from scientifically accurate behaviors. (91)

One good example of the way Carson sees behavior of animals in nature, quoted below, shows her ecocentric vision.

Carson explained her method of expressing a fish as follows:

I have spoken of a fish "fearing" his enemies [. . .] not because I suppose a fish experiences fear in the same way that we do, but because I think he behaves as though he were frightened. With the fish, the response is primarily physical; with us, primarily psychological. Yet if the behavior of the fish is to be understandable to us, we must describe it in the words that most properly belong to human psychological states. ("Foreword," *Under the Sea Wind* 1941, xvii)

On this point, Gartner explains, "To be successful, Carson needed creative imagination, acute observation in the field, and a comprehensive scientific understanding of the sea and its inhabitants (29)."

Carson was influenced by and liked Thoreau's works. Thoreau's book lay at Carson's bedside according to her description in *Since Silent Spring* (Graham 24). They have something in common. For example, they both pointed out human arrogance and they emphasized that human beings were a part of nature. And they were worried that human beings had made too rapid progress. The era of Thoreau was the Industrial Revolution of the nineteenth century, and the age of Carson was after World War II, after atomic bombs were dropped on Japan. The battle against irrational human acts was their common cause, and as a result of it, Thoreau wrote *Civil Disobedience*, and Carson published *Silent Spring*. They took public positions in their books. The Father of India, Indira Gandhi, was influenced by *Civil Disobedience*, and he always kept the book with him. He steered India to independence. Carson's *Silent Spring* also changed America. That is, the book changed not only the public viewpoint but also the environmental policy of the American government. In addition, their sensibility was so close. They even used the same comparison of the surface of water to the sky, and vice versa. In Carson's work, *Under the Sea Wind*, she described the sky and the surface of the sea correspondingly (Chapter II). Thoreau also wrote, "I would drink deeper; fish in the sky, whose bottom is pebbly with stars." This sensibility is common in people that often see nature.

Then, what is the difference between Thoreau and Carson? Two key words "homocentrism" and "ecocentrism" will make it clear. In *Walden*, the aim of Thoreau is to find out what he could learn from living in nature. Thoreau used nature as a guide for his own spiritual growth. He also described how much nature had provided for human beings. As a result he gazed at himself even if it was through nature. For Thoreau, the most significant point was to know oneself as a human being. He wrote in the first part of *Walden*, "In most books, the I, or first person, is omitted, in this it will be retained; that, in respect to egoism, is the main difference. We commonly do not remember that it is, after all, always the first person that is speaking" (3). This attitude of Thoreau caused the separation of human beings from nature, though he said the human being is a part of nature. When he thinks of nature, he is in the center of his thinking. Therefore it is possible to say it is a kind of "homocentrism."

In addition, the view of death and life is greatly different between Thoreau and Carson. Thoreau writes, "Every creature is better alive than dead, men and moose and pine trees, and he who understands it aright will rather preserve its life than destroy it" (*Maine Woods* 135). His opinion is the same with Carson in the point of conservation of every life. Although Carson didn't regard death as evil, she says that "every creature is better alive than dead." Carson said human beings should stop too much unnecessary killing. In *Silent Spring*, she wrote,

Our attitude toward plants is a singularly narrow one. If we see any immediate utility in a plant we foster it. If for any reason we find its presence undesirable or merely a matter of indifference, we may condemn it to destruction forthwith. [. . .] according to our narrow view, they happen to be in the wrong place at the wrong time. [. . .] The earth's vegetation is part of a web of life in which there are

intimate and essential relations between plants and the earth, between plants and other plants, between plants and animals. (63-64)

She knew that human beings could not foresee everything. She knew what the benefit for animals was and that the death of an animal is not only evil. She focused on how nature survives, how the cycles of birth, death, and regeneration in the natural world move apace without any input from the most self-absorbed of species. On this point, we can see her special vision as scientist and writer.

Comparing the viewpoint of Thoreau and Carson, we know that Thoreau saw nature from the human side only. They are common in the thought that man is a part of nature, and the inspiration that nature has a great power. It is their starting point. Thoreau began to live in nature to seek a more spiritual life for himself. I think this is homocentric. During the experience Thoreau learns from nature and wrote *Walden*. On the other hand, Carson learned science to know nature more thoroughly. The more Carson understood natural laws clearly, the more she respected nature. And she wrote books to tell the greatness of nature and her thinking developed through knowing the greatness of nature. Her attitude is to seek the way for human beings to be inside nature. At the same time, she did not disregard human beings in her works. She loved nature itself including human beings, so she could not help pitying and protesting against the pain given to animals and birds in nature.

Other writers also influenced Carson. One great early naturalist writer left her important legacy of viewing the world ecocentrically. John Muir was born in Dunbar, Scotland, on 21 April 1838. He is called the father of the ecology movement by his actions and achievement. For example, he attacked the issue of wilderness preservation to save Yosemite, and formed the Sierra Club to preserve California's natural wonders. Muir traveled much to discover and extol natural wonders. He saw in nature a place to understand himself and a place to worship those forces which remained forever beyond human comprehension. Edwin Way Teale said that Muir saw everything in nature as "the handiwork of God. . . . He spoke with the fire of the Covenanters," and Teale went on to say, "I know of no other writer, with the exception of Henry Thoreau who had so pure and lofty a vision of man's ultimate relationship with nature" (*The Wilderness World of John Muir* xiii). Muir was influenced by Thoreau. Therefore he tended to be "homocentric", for example, in seeing the relationship between man and nature as central to his existence. However, when he saw two white Calypso Borealis flowers standing alone in a swamp, he realized that those flowers were only by chance seen by a human being. They did not serve a special function or have a particular use for man. That moment set Muir to thinking about the function of nature and because of his influence, the focus of naturalists began to shift. He realized that Nature didn't need man to justify itself, even though human beings often need nature to understand themselves. His epiphany, along with his reading of Darwin, shifted his focus from human beings to nature, whose beauty did not need justification or explanation. Muir was able to transcend "homocentrism" by this discovery.

Muir with Carson had a common opponent, the Department of Agriculture, the government agency that was Carson's enemy throughout the controversy in *Silent Spring*. What Muir considered the greatest crime against nature was cutting down of forests. The same government agency was responsible for it. Another similarity between Carson and Muir was that they wrote at the end of an era. Muir's 1890s was the end of the frontier. Therefore, he was in the position to create the environmental policy for the next era in American history. Carson also wrote at the end of an era, World War . Carson showed in her policy statement how we should proceed in *Silent Spring*. Then they both saw the harmony in nature. Muir did not want to save the trees to the exclusion of other aspects of nature, but rather he saw the trees as part of a complex designed entirety that depended upon all of its parts. Muir's vision of nature is central to the late nineteenth and early twentieth-century conservation movement. Like Carson, he also saw the

world from the viewpoint of ecology, under which human beings were only a small part. Both knew the significance of keeping the balance between human beings and nature. Muir's thinking led to the concept of "ecocentrism" and ecology among naturalists of today.

Many writers thus treated nature as a great theme in the tradition of American writers. Nature was closer and more powerful to Americans and decided their fate. As long as nature became the metaphor for the spirit and work as a symbol, nature is significant for American writers.

Herman Melville is another influence, or anti-influence, on Carson. A masterpiece of American literature, *Moby-Dick* written by Herman Melville is the story of battle of a human being against Moby-Dick or the white whale. This white whale is sometimes considered to be symbolic of God, and therefore *Moby-Dick* is said to be a metaphysical story. In addition, we can consider God as a symbolization of nature. Thoreau integrated nature with Christianity. Melville saw God through Moby-Dick. Ahab, the Captain who vows revenge on his enemy Moby-Dick, is, from the eyes of nature writing, the representative of homocentric human beings. He thinks only of his own revenge, in short only of himself. To revenge on Moby-Dick is to satisfy Ahab's anthropomorphic egoism. He sacrifices everything, even the lives of his crew, for his revenge. His attitude is the height of madness. Carson kept Melville's *Moby-Dick* at her bedside during her writing of *Silent Spring* (Graham 24), probably because she saw Ahab as a homocentric man like those human beings who used insecticide to kill all insects without discrimination in her era. Her message is that a human being is a part of nature, and therefore we cannot and should not try to conquer nature. She said in *Silent Spring*, "The 'control of nature' is a phrase conceived in arrogance, born of the Neanderthal age of biography and philosophy, when it was supposed that nature exists for the convenience of man"(297). In this sentence, we see her criticism against homocentrism and anthropomorphism. On the other hand, *Moby-Dick* is valued as a great epic of the ocean and record of whale-hunting. In this work, Melville described the beauty and secret of the ocean vividly from his experiences on a whaling ship. In addition, *Moby-Dick* has a lot of knowledge like natural history, for example, in the 32nd Chapter, "Cetology," the intimate classification of kinds of whales, anatomy, fossils and fables. In this, *Moby-Dick* influenced Carson, too.

Carson's *Silent Spring* is regarded as a classic of nature writing, because it has been politically powerful. The book has Carson's message to the public, warning the people of the danger to nature around them, and it was written from the view of a scientist who knew that nature was brought to a serious crisis. She wrote this book with all her anger and it came from her view of nature.

The core of her book is that nature or earth is not only for men. In the first part, acknowledgements, and the last part of this book, Carson stresses her message that we share our world "with all other creatures" (*Silent Spring* xiv, 296). Carson wrote this book based on this thought. *Silent Spring* was first published in the weekly magazine, *The New Yorker*, by chapters, and therefore the message is found in each chapter. In Chapter 4, "Surface Waters and Underground Seas," readers are told, "This whole chain of poisoning, then, seems to rest on a base of minute plants which must have been the original concentrators" (48-49). She explains, "Here again we are reminded that in nature nothing exists alone" (51). She used the word "chain," which represented the deep relationship of living things in the natural world. In Chapter 15, "Nature Fights Back," Carson referred to nature's balance. Carson wrote, "To dismiss the balance of nature as a state of affairs that prevailed in an earlier, simpler world [...] is highly dangerous"(246). She insisted, "The balance of nature is not the same today as in Pleistocene times, but it is still there" (246). The balance of nature is "a complex, precise, and highly integrated system of relationships between living things which cannot safely be ignored any more than the law of gravity can be defied with impunity by a man perched on the edge of a cliff" (246). This logic is very clear, and readers are brought to reason.

In Chapter 8, she expressed the threat of poisoning from the "chain" by using the image, ripples of water. "In each

of these situations, one turns away to ponder the question: Who has made the decision that sets in motion these chains of poisonings, this ever-widening wave of death that spreads out, like ripples when a pebble is dropped into a still pond?" (127). This description has impact. The fear increases in the reader as the circle of ripples get silently wider. The widening of the ripples is Carson's symbol for the destructive power of man obliterating nature out of our sight. This imagination of Carson shows her literary genius.

The reason why *Silent Spring* entered the best-seller list is not only her political message based on Carson's research but also her ability to express her warning and show the way out of the problem. This book not only kindled public anger and awakened them to the crisis with the examples of poisoning, but also showed the remedy for human beings.

All this is not to say there is no insect problem and no need of control. I am saying, rather, that control must be geared to realities, not to mythical situations, and that the methods employed must be such that they do not destroy us along with the insects. (9)

We see that *Silent Spring* was not written as a direct propaganda. She never meant that chemical insecticides must never be used (12). Then what is the solution, what is the best way? In Chapter 6, "Earth's Green Mantle," we find the solution.

The booming sales of chemical crabgrass killers are another example of how readily unsound methods catch on. There is a cheaper and better way to remove crabgrass than to attempt year after year to kill it out with chemicals. This is to give it competition of a kind it cannot survive, the competition of other grass. (80)

She proposed using natural enemies to control pests. In other chapters, she advised readers to use natural enemies for weeding or getting rid of insects.

Silent Spring was constructed to clarify her message and advice, giving examples of evil influences to tell the serious situation of nature and human beings, and alerting the provinces that were prepared for battle against chemical companies and government. In addition to it, the book has a fable in the first chapter. The first chapter, "A Fable for Tomorrow," is unique in *Silent Spring*, and we see the literary power of Rachel Carson. Linda Lear wrote, "The brief fable with which Carson opens *Silent Spring* is one of the most memorable in contemporary nonfiction and elicited more controversy than almost any other part of the book" (Editor's notes, *Lost Woods* 197). The first chapter is used as a high school text in Japan. The fact shows her beautiful and simple style. According to Linda Lear, "Most literary critics praised her use of the fable as a brilliant rhetorical device and a creative way of introducing the disturbing subject of the deliberate poisoning of the earth"(197). Carson used the fable as a device to engage the nonscientific reader and the point is successful.

Silent Spring was the book someone had to write and Carson took the role, because nobody else would dare write it. At that time chemical companies and the government had huge power and so most people were afraid of their hard attacks. When Carson wrote the book, support came from her friends, cooperators and nature itself. Her respect for nature was the core of the writing. The more she knew about nature, the more she was fascinated by it, and hoped to save it. Although *Silent Spring* is Carson's most famous book, I doubt that it is her most representative book. In *Under the Sea Wind* that was the first published book for her, we see her true knowledge and imagination about the ocean, and the origin of her respect for nature.

3. The Literary Genius of Rachel Carson: *Under the Sea Wind*

Rachel Carson, who tried to integrate science and literature, thought that they had fundamentally the same goal. "The aim of science is to discover and illuminate truth. And that, I take it, is the aim of literature, whether in biology or history or fiction. It seems to me, then, that there can be no separate literature or science"(91). Here, "to illuminate truth" probably means the law of nature, for her. And she knew that nature had poetry in itself.

The wind, the sea, and the moving tides are what they are. If there is wonder and beauty and majesty in them, science will discover these qualities. If they are not there, science cannot create them. If there is poetry in my book about the sea, it is not because I deliberately put it there, but because no one could write truthfully about the sea and leave out the poetry. (*Lost Woods* 91)

Carson saw the possibility of integrating science and nature with the poetry and she told the poetry of the sea or nature by using to the fullest extent her literary genius.

In *Under the Sea Wind*, Rachel Carson showed her readers the strength and beauty of nature. She described magnificent scenes of nature in beautiful and simple words, based on careful observation. The book is built on a series of scenes and stories about animals in and around the sea, and we see laws of nature in action. Although the theme would be just observations from a scientist, she wrote the story with poetic sentences with a lot of atmosphere from the viewpoint of a simple lover of nature. Although the emphasis of the book is not dramatic plot line or powerful characters as in novels about human beings, when we analyze this work, we will see her true aptitude for literature. In addition, returning from *Silent Spring* to this book, we can find Carson's origin of thought that made her write *Silent Spring* and other works. We can also find what message she wanted to tell to her readers or fellow human beings.

There is a reason why *Under the Sea Wind* is better as an example to show Carson's true literary genius than *The Sea around Us* that won the John Burroughs Medal. *Under the Sea Wind* was Carson's first book, so that it has the impulse of her basic beliefs about man and the environment. And it brings us back to the origin, the core message of Rachel Carson. As already mentioned, *Under the Sea Wind* headed the 1951 best-seller list of *New York Times* for many weeks. However, in 1941, when *Under the Sea Wind* was first published, it was not popular, because only after one month from the publication Japanese attacked Pearl Harbor and started the Pacific War. Later, in 1951, taking advantage of *The Sea around Us* becoming a best seller, *Under the Sea Wind* also entered the limelight at a bound. These two works are similar in the point of treating the ocean, but they have a different viewpoint. The author of *Carson to sono Shisou* [Carson and Her Ideology], Tesuo Ota, makes reference to William Henry Hudson (1841-1922) and Konrad Zacharias Lorenz (1903-1989) as influential sources for the beliefs underlying each of these two works (58-60). According to Ota, *Under the Sea Wind* is closer to Hudson's viewpoint and *The Sea around Us* is closer to Lorenz's standpoint. W. H. Hudson was a natural historian as well as writer, and his works *The Naturalist in La Plata*, *Green Mansions*, *Adventures among Birds* and *Far Away and Long Ago* were popular. Carson herself referred to him as a great nature writer when she received the John Burroughs Medal. She said that the field of nature writing, the tradition of John Burroughs, is a long and honorable one, and it had its beginnings in earlier writers. "On the other side of the Atlantic it flowered most fully in the works of Richard Jefferies and W. H. Hudson [. . .]" (*Lost Woods* 94). *The Naturalist in La Plata and Adventures among Birds* were based on Hudson's careful observation of birds. Under such observation, Hudson's eyes turned to individual animals on occasion and he narrated the animal's fate like a novel. On the other hand, Lorenz described animal behavior in detail, and won the

Nobel Prize. His works *King Solomon's Ring* and *On Aggression* are famous. His stories were written by attentive observation like Hudson. As a result of his profession as a naturalist, Lorenz was interested in the scientific observation of animals. Some people think the story about Lorenz and Martina goose (the goose had taken him for its mother) is like a short comedy, but in the story we see his keen eyes as a zoologist. The story is of the same quality as *On Aggression*, his book of animal behavior. In short, Hudson described the fate of one bird which had a proper name, but, in contrast, Lorenz described the genetic features and behavior of birds at the core. Ota states that, even though *The Sea around Us* excels in description, with a very lyrical prose, and despite citing a lot of literary allusions, *The Sea around Us* was, after all, written by the scientist Carson. According to Ota, the poor sale of *Under the Sea Wind* in her early career is one of the reasons that her viewpoint changed. And the change brings the political message into *Silent Spring*. In comparison to these two more famous works, *Under the Sea Wind* is the most novelistic, and therefore it is most instructive to analyze this story to seek her literary genius.

To show Carson's literary talent and her more private voice, it is important to read this story with attention to her style, her description of the scenes, and her treatment of point of view and structure. Her style in *Under the Sea Wind* is simple and beautiful. This style indicates that Carson wrote this book for general people, not biologists. She wrote, "The pleasures, the values of contact with the natural world, are not reserved for the scientists" (*Lost Woods* 160). And she adds, "Knowledge of the facts of science is not the prerogative of a small number of men, isolated in their laboratories, but belongs to all men, for the realities of science are the realities of life itself" (*Lost woods* 165). Therefore, she avoids technicalities of biological oceanography and she refers to nature writers about the design for nature writing, especially "the non-naturalists and our attitude toward them" mentioned in her speech at the John Burroughs Medal ceremony. She suggested to nature writers that

[. . .] a large segment of the public [. . .] has very little knowledge of natural science. I am convinced that we have been far too ready to assume that these people are indifferent to the world we know to be full of wonder. If they are indifferent it is only because they have not been properly introduced to it - and perhaps that is in some measure our fault. (*Lost Woods* 95)

Carson knew that many non-biologists were interested in the role and the value of nature writing from many of her readers' letters. Before the time of her speech on receiving the John Borroughs Medal in 1952, she felt the need of nature writers to be aware of this fact. Around 1942, she wrote the following in the memo to Mrs. Eales, who was in the publisher's marketing department, on *Under the Sea Wind*.

I believed that most popular books about the ocean are written from the viewpoint of a human observer - usually a deep-sea diver or sometimes a fisherman - and record his impressions and interpretations of what he saw. (*Lost Woods* 55)

Carson was obviously critical of the homocentrism of popular books on the ocean.

From the beginning, *Under the Sea Wind* was a book about the ocean for the public. The editor-in-chief of Simon and Schuster, Quincy Home, suggested writing the book about the ocean for the public to Carson. Carson decided to write a book that gave non-biologists a true picture of life in the sea. Therefore, she created her simple and beautiful style. In the second section of *Under the Sea Wind*, Carson describes a mackerel named Scomber, one of the major characters in the book:

Now he had put on the sea coat of the adult mackerel. He was clothed in scales, but they were so fine and small that he was soft as velvet to the touch. His back was a deep blue green - the color of the deep places of the sea that Scomber had not yet seen - and over the blue-green background irregular inky stripes ran from the back halfway down his flanks. His under-parts gleamed of silver, and when the sun found him as he moved just under the surface of the sea he glittered with the colors of the rainbow. (140)*³

Readers can visualize this mackerel easily, even the way he feels to the touch, like velvet. We know only the mackerel in stores or on the table. The fish is already dead or cut or cooked, and the colors have faded and the touch of velvet has gone away. In addition, Scomber is the scientific name of mackerel in classification. (Kamito, *Shiokaze no Shitade* 1). Similarly, many other animals have their names that come from the nomenclature. For example, the black skimmer's name is Rynchops, an osprey is called Pandion, a mullet Mugil, an eel Anguilla, a trout Cynoscion and the angler fish Lophius. Animals' names that do not come from the nomenclature have some meaning also. For instance, names are given according to their characteristics such as a sanderling that has glossy black feet and wings lined with a silver bar with its wings extended, whose names are Silverbar and Blackfoot. The name of a cock owl, Ookpik and the raven's name, Tullugak, come from Inuit. The Inuit live in the Tundra region, on the North Atlantic coast, and therefore Carson chose this name from Inuit. Carson did not refer to the origin of their names in this book, perhaps because she was afraid of pushing knowledge and giving the bias that readers should know the names of animals in detail. And she also thought that anyone who had an interest in the names could check on the nomenclature.

Carson's literary genius is obvious also from her style, which is not only simple and easily understood, but also has poetry and music. Some critics say Carson's writing is poetic. There are some rhymes through *Under the Sea Wind*: "On a day when the full harvest moon sailed like a white balloon in the sky, the tides, which had grown in strength as the moon swelled to roundness, began to wash out a gully across the inlet beach" (82 Italics mine). This sentence is so beautiful not only in the sound but also in the visual image. Readers can visualize the scene of the silver harvest moon sailing silently in the night sky. At the same time, they become aware of the close connection between the moon and the sea - Carson's constant awareness of the scientific process occurring with the beauty of nature. In the following sentence, she explained the phenomenon of the visiting tide in the inlet.

Only on the highest tides did the torpid pond receive water from the ocean. [. . .] Leaping and racing, foaming and swirling, the incoming flood brought release to the myriads of small fishes that had been imprisoned in the pond. (82-83)

The sailing of the moon in the sky means both the putting out to sea for fish and the movement of the tide. Readers see the relationship of fish and tide and the moon. And there were many descriptions in which she regarded the sky and the sea as parallel. For example, "They leave in their wake a cloud of transparent spheres of infinitesimal size, a vast, sprawling river of life, the sea's counterpart of the river of stars that flows through the sky as the Milky Way" (115). And elsewhere, she writes, "[There] had been dark nights with the sea lying calm under a wide sky. On those nights the little stars of the plankton had rivaled in number and brilliance the constellations of the sky" (123). Whether she saw the scenes or visualized it, it shows her rich imagination. From this description readers awaken to

*³ Henceforth all citations from *Under the Sea Wind* will be from the 1969 Penguin edition.

the similarities of different things in the natural world. Her poetical and private voice tells interesting facts, from which readers know the relation of the natural world and the laws of nature. The facts awaken readers indirectly to the ecological viewpoint.

The concreteness of description is another characteristic of Carson's style. Carson had tact in expressing the process of an animal's death. For example, Carson expressed the death of a catfish.

[. . .] the fish, drained of life by separation from the water, grew limp as all its struggles ceased. Like a mist gathering on a clear glass surface, a film clouded its eyes. Soon the iridescent greens and golds that made its body, in life, a thing of beauty had faded to dullness. (91)

The concrete changes of approaching death one by one make this scene beautiful and emotional. There is no feeling of pity or cruelty toward the fish like human beings in this sentence, but there is a calm acceptance and understanding of the change and death.

Carson can also describe microscopic events that even a real camera cannot film. Her camera - her narrative point of view - is all-powerful, and can see anything that is known to science. One wonderful example is the scene about the freezing of the eggs of cock owls, because their parents were forced to flee from heavy snow in the tundra to escape death.

As the snow fell on the still-warm eggs and the hard, bitter cold of the night gripped them, the life fires of the tiny embryos burned low. The crimson streams ran slower in the vessels that carried the racing blood from the food yolks to the embryos. After a time there slackened and finally ceased the furious activity of cells that grew and divided, grew again and divided to make owl bone and muscle and sinew. The pulsating red sacs under the great oversized heads hesitated, beat spasmodically, and were stilled. The six little owls-to-be were dead in the snow, and by their death, perhaps, hundreds of unborn lemmings and ptarmigans and Arctic hares had the greater chance of escaping death from the feathered ones that strike from the sky." (51-52)

Carson used concrete facts to explain the process of death for the eggs, and the readers feel as if they were watching a real film. She avoids emotional pity for the death of the eggs and it is typical of her scientifically objective point of view that their death is seen as beneficial in keeping the natural balance of the hunter and the hunted. She finds drama in scenes which are far more moving than in the limited stage of human vision. She also brings to the readers' awareness the ecological viewpoint of the food chain, and the reader realizes that death is not evil or sad in the natural world but something to be accepted according to natural laws. She describes a case in which some animal's death gives birth to other animals in nature. The cock owl, Ookpik, hunts ptarmigans. The scene is beautiful, too, and symbolic and concrete. However, it is like an actual film.

Now Ookpik, as he came up the stream valley, saw among the willows the moving balls of shining black that were the ptarmigan's eyes. The white foe moved nearer, blending into the pale sky; the white prey moved, unfrightened, over the snow. There was a soft whoosh of wings - a scattering of feathers - and on the snow a red stain spread, red as a new-laid ptarmigan egg before the shell pigments have dried. (55)

Readers can visualize the scene of red death, but there is no barbarity. The reader can visualize death from the scattering of feathers and the red stain. The method brought death into strong relief, but it was calm and symbolic. The death of the ptarmigan is essential for the cock owl Oookpik. It is the circulation of lives. Carson does not describe death in nature as a negative image. She goes on to describe how he carried it with his talons to his lookout, where his mate awaited him, and ate it. The tragedy which is usually suggested by the blood image is immediately transformed into a symbol of birth with the red color of the new-laid ptarmigan eggs. This description is full of vivid colors and Carson's wonderful choice of color adjectives gives it underlying meanings.

Furthermore, Carson enriches her style by using metaphors and similes. She expressed the relationship, the strength and weakness of sea creatures, by using the similes dealing with war: arms, arrows, protectors, shields and enemies.

On the second day, as the cells within the golden globules of the eggs multiplied by countless divisions, and the *shieldlike* forms of embryo fish began to take shape above the yolk spheres, hordes of a new *enemy* came roving through the drifting plankton. The glass-worms were transparent and slender creatures that cleaved the water *like arrows*, darting in all directions to seize fish eggs, copepods, and even others of their own kind. (121 Italics mine)

Thus, Carson uses related metaphorical images to point out that minute things such as cells in eggs also fight a daily war. Her message gets across more effectively than if she had written a scientific paper. Her imagination can do things that no scientific fact-reporting can do.

Carson was aware of the importance of fictional imagination to convey scientific truth. She remembers how she began thinking of writing stories about the deep ocean.

At Woods Hole [• • •] the dredge would be pulled up and its load of sea animals, rocks, shells, and seaweeds spilled out on the deck. Most of these animals I had never seen before; some I had never heard of. But there they were before me, dripping with sea water and perhaps clinging to a piece of rock or shell or weed that they had brought up from their home down there on the bottom of the sound. Probably that was when I first began to let my imagination go down through the water and piece together bits of scientific fact until I could see the whole life of those creatures as they lived them in that strange sea world. (*Lost Woods* 54)

Her great imagination brought together a variety of viewpoints that entered inside those creatures. About her imaginative viewpoint in *Under the Sea Wind*, she writes as follows:

As far as possible, I wanted my readers to feel that they were, for a time, actually living the lives of the sea creatures. To bring this about I had first, of course, to think myself into the role of an animal that lives in the sea. I had forgot a lot of human conceptions. (*Lost Woods* 55-56)

As a result, Carson didn't use the human measure of time for the animals' stories. She expressed the passing of time by using phases of the moon or the earth's rotation. She noted the measurement of time, or day, hour and month, for readers. "When Silverbar had begun to brood her eggs, the moon had been at the full. Since then it had dwindled to a thin white rim in the sky and now had grown again to the quarter, so that once more the tides in the bay were

slacker and milder" (64). Silverbar had heard the sound in the egg throughout the night. It was the pecking of the sanderling chicks, after twenty-three days made them ready for life. Carson describes the passage of time which brings change to plants from the plants' viewpoint.

Now the sun dipped farther below the horizon; the grayness of the nights deepened; the hours of twilight lengthened. [. . .] The foodstuffs - the starches and the fats - had been stored away in the seeds to nourish the precious embryos, into which had passed the immortal substance of the parent plants. The summer's work was done. No more need of bright petals to lure the pollen-carrying bees; so cast them off. No more need of leaves spread to catch the sunshine and harness it to chlorophyll and air and water. Let the green pigments fade. Put on the reds and yellows, then let the leaves fall, too, and the stalks wither away. Summer is dying.

Soon the first white hairs appeared in the coats of the weasels, and the hair of the caribou began to lengthen. (70)

Thus, to see nature through the viewpoint of nature reminds us of the fact that the human way of measuring time by the clock has little meaning in nature. Carson tells us that we human beings are only a part of the vast earth. She has a reason why she decided "that the author as a person or a human observer should never enter the story, but that it should be told as a simple narrative of the lives of certain animals of the sea" (*Lost Woods* 55-56). She says, "The ocean is too big and vast and its forces are too mighty to be much affected by human activity" (*Lost Woods* 55). Therefore we see some descriptions of the vastness of the ocean in *Under the Sea Wind*.

Below them lay the abyss, the primeval bed of the sea, the deepest of all the Atlantic. The abyss is a place where change comes slow, where the passing of the years has no meaning, nor the swift succession of the seasons. The sun has no power in those depths, and so their blackness is a blackness without end, or beginning, or degree. [. . .] Those abysmal waters [. . .] varies little through summer or winter, through the years that melt into centuries, and the centuries into ages of geologic time. Along the floor of the ocean basins, the currents are a slow creep of frigid water, deliberate and inexorable as the flow of time itself. (261)

This description of the ocean depths shows its elemental grandeur. It shows Carson's poetry, too. However, she had said that if there was poetry in her book, it was because no one could write truthfully about the sea and leave out the poetry (*Lost Woods* 91). It is because she identified with the sea creatures that her style became poetic.

In addition to the measure of time, Carson shows us in *Under the Sea Wind* that the ocean has so many aspects that cannot be seen by human beings. For example, a buoy floats on the surface of the ocean. Common people regard it as just a buoy for fishery. But it is seen from the viewpoint of sea creatures underwater, not from the human viewpoint, and the buoy becomes a cosmos. "The inlet buoy was a cosmos unto itself, rolling in the waters of the sound. Ebb tide and flood tide were of its own making, coming alternately as the buoy lifted to the passing of a wave and rolled in its trough" (96). She had a reason for saying the buoy was a cosmos. It is an entire world for sea animals when we look at it through their eyes. "Most of the twenty or more kinds of sea animals that lived on the buoy had come to it months before, during the season when the waters of the sound and inlet swarmed with larvae" (96). Carson's perspective lies almost always in the marine creatures in this work. We see even man-made objects like the buoy from their point of view.

In structure, *Under the Sea Wind* is divided into three parts, one to picture the life of the shore, one for the open sea, and one for the deep abyss. She said the reason for the three parts was "[. . .]to give a fairly complete picture of sea life," in the memo to Mrs. Eales (*Lost Woods* 56). Carson tells the life story of one particular animal in each of these parts. She loved all the sea animals, but she didn't hold to any one creature in *Under the Sea Wind*. In short, it seems that there is no central character unifying the book. In *Lost Woods* she wrote that she chose a central character for each of the three parts of *Under the Sea Wind*. In the first section, "The Edge of the Sea," she chose the sanderling, Blackfoot and Silverbar, as the main character of this shore section. In the second section, "The Gull's Way," Scomber, the mackerel, is the central character. In the third section, "River and Sea," the eel, Anguilla, takes her mysterious journey to the deep abyss and becomes the center. However, they seem to be temporary central characters. Carson often shifts to other animals, such as a cock owl, a lemming or black skimmers. The structure is like a chain and each has a connection to nature which shows Carson's concept of the laws of the ocean as a great force that moves according to iron laws.

I very soon realized that the central character of the book was the ocean itself. The smell of the sea's edge, the feeling of vast movements of water, the sound of waves, crept into every page, and over all was the ocean as the force dominating all its creatures. (*Lost Woods* 56)

The ocean is a stage as well as the main central character of *Under the Sea Wind*. In the amazing paragraph below, Carson makes us witness the circular completion of the food chain occurring in the course of a few hours. The reader gets to see not only the law of survival among the network of lives, but also the importance of ecology.

The ghost crab, still at his hunting of beach fleas, was alarmed by the turmoil of birds overhead, by the many racing shadows that sped over the sand. By now he was far from his own burrow. When he saw the fisherman walking across the beach he dashed into the surf, preferring this refuge to flight. But a large channel bass was lurking near by, and in a twinkling the crab was seized and eaten. Later in the same day, the bass was attacked by sharks and what was left of it was cast up by the tide onto the sand. There the beach fleas, scavengers of the shore, swarmed over it and devoured it. (*Under the Sea Wind* 36)

In many other scenes, Carson shows readers the chain of life as a law of survival in nature. For example, the little mackerel, Scomber, ate floating one-celled plants, but he was attacked by anchovies, and then the blue fish began to hunt the anchovies so that Scomber could escape from the attack of the anchovies (130-133). Only when one places oneself in the chain of life does one know the reason for the existence of the entire world and the fact that he or she is just one part of a vast world. Carson thought that man was only one part of nature, having the same right to exist as each living creature in nature.

Nature with its laws treats all animals equally. Readers see nature or the world as constructed from all their lives. Human beings who are fishermen are given no more than the time and attention she gives to other animals. In one scene of *Under the Sea Wind*, fishermen appear as predators like sharks and eagles. One time they succeed in their fishing and another time they fail, like other predators. "The lookout who stood on a high dune above the inlet saw the first of the mullet running out of the sound. With practiced eye, he estimated the size and speed of the school from the spurts of spray when the mullet jumped" (97-98). Although Carson was a human being she wrote of the fishermen with detachment. "It's not easy, launching a boat in this surf. The men leap to their places like parts of a

machine" (99). The description of men like "parts of a machine" implies Carson's criticism toward mankind - men who have lost their humanity because of their homocentric desire to conquer nature.

There are sentences about human beings that are clearly different from other animals. One part is about human hunters with guns who are seen as strangers in the law of nature, because they destroyed the scene of the great flights by decreasing the number of the birds. *Under the Sea Wind* does not issue a political warning like *Silent Spring*, and therefore there is no outright criticism about the hunters. But in the following sentences Carson's inward anger is seen:

Some, perhaps, would fall by the way. Some, old or sick, would drop out of the caravan and creep away into a solitary place to die; others would be picked off by gunners, defying the law for the fancied pleasure of stopping in full flight a brave and fiercely burning life. (76)

In the 12th chapter, a young fisherman, who is a contrast to the gunners, appears. And in this chapter a process of fishing called "seine hauling" is described both from the young fisherman's eyes and from the mackerel's eyes. In the first part of the chapter, Carson tells the reader about the phenomenon in the ocean in November.

That night the sea burned with unusual phosphorescence. Many fish were near the surface, feeding. The chill of November quickened their movements, and as their schools rolled through the water they disturbed the millions of luminous plankton animals, causing them to glow with a fierce luster. (194)

Carson describes the movement of the mackerels which are about to be caught. She created as central character a mackerel named Scomber whose life she follows in order to illustrate concretely what it is like to live as a fish in the ocean. Carson wrote, "I have written the biography of a mackerel, beginning, as biographies usually do, with the birth of my central character" (*Lost Woods* 58). This section is from the 6th chapter, and the reader watches Scomber as a fish egg before his birth and takes the journey through the vast ocean along with him. In Scomber's story, we see her hope that people would discover how precious the life of each fish is. Mackerels of the school that Scomber belonged to feed on shrimps, who were pursuing copepods. "All about him were fish - layer upon layer in the water above - layer upon layer below; fish to right and left - fish before him and behind him" (195). Then, the viewpoint moves to the fisherman's.

"Mackerel!" called the lookout at the masthead. [. . .] The seiner carried no light. To do so might frighten the fish. [. . .] But wait! Was there a flicker of light - a pale ghost of flame playing over the water there off the port bow? If there had been such a light it faded away into darkness again and the sea lay in black anonymity - a black negation of life. [. . .] Then came a faint but unmistakable patter like a squall of rain on the sea - the sound of mackerel, the sound of a big school of mackerel feeding at the surface. (195-196)

After the fishermen find the school of mackerel, the captain gives the order to attempt a set. The boats make a smaller circle and the water becomes brighter by higher density of mackerels. Carson creates a dramatic scene by placing our perspective with the mackerel.

The mackerel were nervous and uneasy. Those on the outside of the school were aware of a heavy

movement, as of some large sea creature in the water near them. [. . .] Some of them saw above them a moving, silver shape, long and oval. [. . .] The shapes might have been those of a she-whale with two calves following at her side. (198)

The tension becomes intense when Carson moves the perspective from the school of fish to Scomber, the central character of this part.

Somewhere near the center of the school, Scomber was confusedly aware of the increasing press of fish about him and of the blinding glare of their bodies, clothed in sea light. For him the net did not exist, for he had not seen its plankton-spangled meshes nor brushed its twine with snout or flanks. Uneasiness filled the water and passed with electric swiftness from fish to fish. All about the circle they began to bunt against the net and to veer off and dash back through the school, spreading panic. (199-200)

When the fish are in panic, a young fisherman in the seine boat, who had been only two years at sea, turns his thoughts toward the fish, the mackerel.

Not long enough to forget, if he ever would, the wonder, the unslakable curiosity he had brought to his job - curiosity about what lay under the surface. He sometimes thought about fish as he looked at them on deck or being iced down in the hold. What had the eyes of the mackerel seen? Things he'd never see; places he'd never go. He seldom put it into words, but it seemed to him incongruous that a creature that had made a go of life in the sea, that had run the gauntlet of all the relentless enemies that he knew roved through that dimness his eyes could not penetrate, should at last come to death on the deck of a mackerel seiner, slimy with fish gurry and slippery with scales. But after all, he was a fisherman and seldom had time to think such thoughts. (200)

This young fisherman is a unique figure among the humans who appear in the book. First of all, he seems sympathetic toward the fish. Second of all, he is imaginative enough to wonder at what it would be like to live undersea as a fish. Third and most important, he is seen from inside - a use of point of view which Carson had so far only reserved to other animals. It seems that this description of his mind represents Carson's mind to some extent. It is at least extremely close to the reader's. We stretch our imagination to satisfy our curiosity about what lay under the surface, and what it would be like to be a fish. The importance of this young fisherman lies in the contrast he makes to our other protagonists such as Scomber. When we find the young fisherman so unique, we suddenly become aware that we have been looking at human beings the way fish in the ocean look at them.

In the boat, the fisherman sees the water, the light from the fish within the circle of net disappearing. That meant the fish school had sounded. They escape from the net and they are safe. The fisherman visualizes "what he could not see in fact - the race and rush and downward whirl of thousands of mackerel" (202). Carson makes him voice what she would have said herself. "He suddenly wished he could be down there, a hundred feet down, on the lead line of the net" (202-203). In addition, Carson has the fisherman think, "What a splendid sight to see those fish streaking by at top speed in a blaze of meteoric flashes!" (203). His attitude toward nature is not like a fisherman's. She used the young fisherman to represent her real message. His mind was filled with curiosity about nature, and the attitude toward nature brought Carson's true message. Through this book, Carson wanted to tell the reader the reality

of nature and its greatness without human bias, and the relationship of living things in the ocean. She succeeds in making us sensitive toward the natural world. To make the viewpoint, we need rich imagination and to be sensitive toward the natural world. *Under the Sea Wind* cannot have been written without Carson's imagination and sense of wonder. Carson believed the importance of the sense of wonder through her life.

4. Ecocentric Vision in *A Sense of Wonder*

Rachel Carson's life and writing career shows us a woman devoted to awakening us to the preciousness of our natural environment. But was she merely a voice in the wilderness driving us to ecological causes? This study shows that she was based on deeper roots. She knew that no political movement would last unless she could make us take the wider perspective of the entire earth - to abandon homocentric narrowness and discover the ecocentric vision of nature.

Rachel Carson united natural science with creative writing. The value of her works lies not only in her accurate and persuasive description of scientific facts, but also in her rhetorical and symbolic expression of the natural world. She sensed the symbolic beauty and mystery in nature, and expressed it beautifully and movingly. But what is at the bottom of her works - her private voice - is her philosophy for our life. She is not only motivated by her alarm at discovering nature in danger of chemicals as in *Silent Spring*, but even more fundamentally by her love of nature which embraces all things and teaches us to accept not only the abundance of life but the necessity of death. This philosophy, which she stated in simple terms in her first work, *Under the Sea Wind*, was most poetically and explicitly stated in her last work, *The Sense of Wonder*.

There is symbolic as well as actual beauty in the migration of the birds, the ebb and flow of the tides, the folded bud ready for the spring. There is something infinitely healing in the repeated refrains of nature - the assurance that dawn comes after night, and spring after the winter. (*The Sense of Wonder* 100-101)

Carson saw the cycle of the tides of life in the refrain, and understood death as a part of the cycle. It gave power to her pregnant imagination. She wrote about death through her understanding of the rhythms, enduring cycles, and patterns of the natural world. In the last summer of her life, knowing she was doomed by cancer, she wrote a letter to her friend, Dorothy Freeman, about seeing some beautiful Monarch butterflies.

For me it was one of the loveliest of the summer's hours, and all the details will remain in my memory [. . .]. But most of all I shall remember the Monarchs, that unhurried westward drift of one small winged form after another, each drawn by some invisible force. We talked a little about their migration, their life history. Did they return? We thought not; for most, at least, this was the closing journey of their lives.

But it occurred to me this afternoon, remembering, that it had been a happy spectacle, that there would be no return. And rightly - for when any living thing has come to the end of its life cycle we accept that end as natural.

For the Monarch, that cycle is measured in a known span of months. For ourselves, the measure is something else, the span of which we cannot know. But the thought is the same: when that intangible cycle has run its course it is a natural and not unhappy thing that a life comes to its end.

That is what those brightly fluttering bits of life taught me this morning. I found a deep happiness in it - so, I hope, may you. Thank you for this morning. (Lost Woods 246)

This letter was intended to acknowledge her approaching death and to comfort her friend. Although she faced her own death, she remained sympathetic and kind to those she would leave. Her imagination and creativity came from the sense of wonder in nature. Carson believed in the significance of the sense of wonder through her life. When she knew she had a little more time to work, she began to expand her 1956 article, "Help Your Child to Wonder," into a book on the value and necessity of the sense of wonder in the modern world, because she thought it more important than the book on evolutionary biology she had been planning to write.

What is the value of preserving and strengthening this sense of awe and wonder, this recognition of something beyond the boundaries of human existence [. . .]? I am sure there is something much deeper, something lasting and significant. Those who dwell, as scientists or laymen, among the beauties and mysteries of the earth, are never alone or weary of life. Whatever the vexations or concerns of their personal lives, their thoughts can find paths that lead to inner contentment and to renewed excitement in living. (100)

Through her works, we find that Carson makes us regret our homocentric attitudes and realize the need to stop our destruction of nature. In *Silent Spring* she pushed out this message, because many people sought their own profit, but in our view, that was not her most important purpose in life.

The sense of wonder is the starting point of all things for Rachel Carson. It gave her a highly spiritual motivation as well as the material to write about. Therefore she could not only accomplish writing *Silent Spring* in spite of being surrounded by enemies on all sides, but also was able to write *Under the Sea Wind* which was even more moving because we see reality through the eyes of the ocean creatures and experience their hardship.

Rachel Carson turned the tide in twentieth-century ecology by her writing. The twenty-first century is seen by many people as "the century for environment," but at the same time scientific techniques have progressed rapidly and continue to threaten nature. Carson has said, "We stand now where two roads diverge. [One road] that we have long been traveling is deceptively easy, a smooth superhighway on which we progress with great speed" and the other is a "fork road---the one ' less traveled by " (*Silent Spring* 277). With the allusion to Frost's famous poem^{*4}, she explained that the end of the former pointed to insecticide poisoning and disaster, and the latter, alternatives to the chemical control of insects, is "our last, our only chance to reach a destination that assures the preservation of our earth"(277). She suggested, "We should look about and see what other course is open to us" (278). The source of finding "the other course" is her particular "sense of wonder." To find the other way needs time and creative inspiration of specialists, and we cannot see it directly and behind showy things like quick-acting chemicals. But even if the other road is found by specialists, "The choice, after all, is ours to make" (277). We need to awaken our imagination to see this world as a network of lives and to feel the sense of the breathing of all creatures. Carson wrote in *The Sense of Wonder*; "If I had influence with the good fairy who is supposed to preside over the christening of all children I should ask that her gift to each child in the world be a sense of wonder so indestructible that it would last through life" (54). The sense of wonder is what awakens our imagination - the origin of all things that Carson hoped to see. And to keep it, even when we are old, is the most significant message of her life and work.

^{*4}"The Road Not Taken " by Robert Frost, American poet (1874-1963).

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レイチェル・カーソンと環境文学

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環境運動の産みの母と呼ばれるレイチェル・カーソン(1907-1964)の最も有名な三作『沈黙の春』、『潮風の下で』、『センス・オブ・ワンダー』を分析し、『沈黙の春』によって定着した政治運動家のイメージの裏にある環境文学者カーソンの再評価を試みる。三作を比較すると、『沈黙の春』はカーソンの全作品の中では化学的事実と政治運動に拘った異質な作品であり、対照的である文学的な処女作の『潮風の下で』や遺作『センス・オブ・ワンダー』がむしろカーソンが生涯テーマとして扱ってきた自然を自然の立場から眺めるという哲学(ecocentrism)を貫いている。カーソンは自然現象を観察する二観点を対立させ、人間を中心に自然を考えていた19世紀のhomocentrismに挑戦し、自然界の動物を物語の中心人物にした画期的なecocentrismを生み出して、文学の力を通して20世紀に環境保護という新たな意識を確立させた。

キーワード：レイチェル・カーソン、環境文学、『潮風の下で』、『沈黙の春』、『センス・オブ・ワンダー』、エコセントリズム、ホモセントリズム

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